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**ABSTRACT**

An apparatus for removing constituents from a fluid stream is provided. The apparatus includes a duct, a collection device, a sorbent injector, and an acoustic generator. The duct has a fluid passageway to receive a fluid stream having constituents. The collection device filters the fluid stream. The sorbent injector injects a sorbent in the fluid passageway of the duct. The acoustic generator generates an acoustic field in the fluid passageway of the duct to promote sorption of the constituents for collection by the collection device. Additionally, a method is provided for removing constituents from a fluid stream.